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Department of
Agriculture

Forest Service

Southwestern
Region

Cibola National Forest and Grasslands

2008 Monitoring and Evaluation Report

July 2009



Table of Contents

Forest Supervisor Certification	2
Executive Summary	3
Forest Plan Background and Amendments	5
Table of Monitoring Activities, Results, and Relevant Comments for FY 2008, Cibola National Forest and National Grasslands.....	7

Forest Supervisor Certification

I certify that the Cibola National Forest Plan (Forest Plan) as amended is sufficient to guide future management of the Cibola National Forest and Grasslands until the plan revision process is completed.

This Monitoring and Evaluation Report meets regulatory requirements for completing an annual report for the fiscal year of 2008, based on the 1982 planning rule at 36 CFR 219.

Nancy Rose, Forest Supervisor

Date

Executive Summary

This section summarizes the monitoring table found on pages 6 to 30. It reports monitoring results and inferences that are anticipated to be relevant to future management.

Cultural Resources monitoring consisted of 89 heritage resource sites that were determined to be eligible for the National Registry. One hundred and twenty-seven surveys were conducted for Section 106 clearances, and 25 sites were inspected to satisfy deferred maintenance requirements or were opportunistic inspections (non project related)

Monitoring by the engineering program shows that no new roads were constructed on the Cibola National Forest and Grasslands in 2008. Approximately 280 miles of Forest Service roads were maintained in 2008, and no roads were obliterated. Emphasis for 2009 and beyond will be working with the Ranger Districts on Travel Management planning and developing an inventory of all roads on FS lands.

The fire program monitored several prescribed burns and wildland fires in 2008. Due to an above-normal year for winter and spring precipitation, there were fewer wildland fires and those that did occur were smaller in size. Monitoring results indicate that it is likely better to wait two years post fire damage to assess reforestation needs. On the Trigo and Dripping Springs, and Lake McClellan wildfire burns, extensive first order fire effects (mortality) are apparent. The Cibola will continue to monitor post fire mortality for next several years, and tree planting may be needed within the Lake McClellan developed recreation area.

Fire prevention monitoring showed the need for more outreach to local communities and technical assistance to carry out an effective program. Despite fire prevention education efforts, there continue to be people who do not know about fire prevention programs or do not choose to follow recommended guidelines. However, residents adjacent to Wildland Urban Interface (WUI) areas are starting to do treatments on private land based on information that is being shared. Nonetheless, fire hazard levels support a need to increase efforts to assist communities in developing a Firewise program. Collaboration with the East Mountain Interagency Fire Protection Assoc. (EMIFPA) for fire prevention/education outreach and interagency cross training is desirable. In FY 2008, the Cibola developed a comprehensive Communication Plan to provide better public communication.

Fire and fuels monitoring indicated that there needs to be a Region Three fuels monitoring protocol standardized across Forests.

The forestry program needs greater law enforcement presence to facilitate fuelwood permit and contract compliance. Resource damage is occurring in some areas due to insufficient law enforcement and the lack of qualified Forest Protection Officers to

FY 2008 Monitoring & Evaluation Report – Cibola National Forest & Grasslands

enforce permit and contract requirements. This is primarily a function of reduced budgets and zoning in law enforcement and their inability to adequately staff for the complexity of law enforcement issues occurring on the Forest and within their Zone.

The spread of insects and disease and their associated effects is continuing to affect the Forest in various places. On the Sandia Ranger District, high mortality from tussock moth infestation has left many hazard trees in recreation sites. Hazard trees in and around the Sandia recreation sites are felled by Forest Service volunteers and can be gathered under fuelwood permits. Monitoring in 2008 revealed that it is almost impossible to cut and remove dead, hazardous trees at a pace that matches the rate of mortality.

Monitoring forest and watershed health across the Forest has shown that at the current management regime and funding levels, the Forest does not have the ability to accomplish activities at a scale large enough to change the landscape. However, strategic placements of treatments accomplished jointly by Forestry, Watershed, Wildlife and Fuels programs can assist in treating the areas prioritized as having the most resources at risk.

Lands Adjustments monitoring indicates that the acquisition of six private inholdings (2510 acres) will require reposting of forest boundary landline. The Forest also acquired 7 right-of-ways, totaling approx. 10 miles.

Minerals monitoring activities indicated significant uranium exploration interests exist. Also, compliance inspections in this arena are reduced compared to past years, due to limited personnel. A significant number of mineral withdrawals need to be reviewed and appropriate action taken.

Range monitoring has shown that weather and climate continue to be the most frequent reasons for adjusting grazing strategies through adaptive management processes. On the Kiowa and Rita Blanca National Grasslands, drought in 2008 combined with cumulative effects of below normal rainfall in preceding years and resulted in lower forage production. Death of some forage plants is evident in Cimarron County, Oklahoma and Union county, New Mexico. Adaptive management has enhanced permittee compliance and is helping to meet management goals and objectives. Annual planning and cooperative strategizing has resulted in increased permittee compliance. Monitoring and analysis for rangeland ecological health has shown that conditions are shifting towards desired conditions in some areas. Almost all pastures were in compliance with the Annual Operation Instructions for 2008.

In the recreation program, monitoring has revealed that the priority of travel management analysis has had the effect of reducing recreation monitoring activities on much of the forest and grasslands. On Kiowa and Rita Blanca National Grasslands, there has been increased developed recreation persons-at-one-time (PAOT) capacity due to completion of the Mills Canyon campground project. There is a need for better law enforcement on some trails to control unauthorized use (ATV use on snowmobile trails).

FY 2008 Monitoring & Evaluation Report – Cibola National Forest & Grasslands

Monitoring of special use permits shows that permits issued for longer terms reduces the burden of re-issuance. However, compliance inspections are severely reduced due to limited personnel.

Monitoring of projects for wildlife habitat improvement has led to several observations about their effectiveness. Forest-wide thinning has improved vegetation and water production and resulted in heavy use by elk. Cattle and elk grazing cumulatively are having detrimental effects on vegetation on the Magdalena District. Armijo Canyon goshawks re-appeared on the Sandia District but nesting was not successful. No southwestern willow flycatchers were detected despite available and suitable habitat on Mount Taylor and Mountainair Districts. Ponderosa pine/Gambel Oak PACs for Mexican spotted owl were more productive on Magdalena District than were mixed conifer Protected Activity Centers (PACs). Peregrine falcons' overall occupancy is slightly increasing on the Cibola Forest. Rock climbing may be affecting Peregrine falcon eyries on Magdalena District. Management indicator species are stable or increasing throughout the forest. Raptor passage rates on Mountainair and Magdalena Districts generally increased (with exceptions) for buteos and decreased (with exceptions) for raptors in 2008. Monitoring in 2008 showed that the use of artificial watering sites is directly correlated to the availability of natural water sources. The use of water developments decreases with the availability of natural water. Monitoring of the Habitat Stamp program provides data that is helpful in determining maintenance needs of wildlife structures. Data suggests riparian enclosures are of limited effectiveness in recovering riparian vegetation.

Forest Plan Background and Amendments

The Forest Plan and associated EIS were published in 1985. Preliminary Forest staff recommendations for updating the Forest Plan were developed in 1996-1999 and are contained in the Geographic Area Assessments produced by the Interdisciplinary Team.

The following amendments were made to the 1985 Forest Plan:

Amendment Number	Decision Date	Amendment Description
Amendment #1	01/09/87	Clarified language throughout all five chapters
Amendment #2	05/25/89	Added electronic site near Boise City, OK for the Coast Guard's Long-Range Aid to Navigation (LORAN-C)
Amendment #3	06/30/89	Changed timber projections based on projects in Las Huertas Canyon near Placitas, NM
Amendment #4	05/29/90	Revised the 10-year timber sale schedule, amended fire management S&Gs, added black bear and curlew to the MIS list, changed ROS for MAs 8 and 13, RATM
Amendment #5	06/27/90	Designated Oso Ridge Lookout as an electronic site
Amendment #6	09/06/91	Established S&Gs for capital investment priorities and Sandia winter use; added the grasshopper sparrow to the

FY 2008 Monitoring & Evaluation Report – Cibola National Forest & Grasslands

		MIS list; and established S&Gs for Aberts squirrel
Amendment #7	09/09/96	Added Regional direction for management of Mexican spotted owl, northern goshawk, grazing, old growth
Amendment #8	12/20/96	Returned federal lands near Kirkland Air Force Base from DOE back to the National Forest System
Amendment #9	09/18/97	Established Bernalillo Watershed Research Natural Area
Amendment #10	10/17/02	Identified eligible wild and scenic rivers and added direction for protecting their values
Amendment #11	07/10/08	Changes to Sandia RD direction required by Travel Management decision
Amendment #12	08/26/08	Changes to Grasslands (Management Areas 4 and 5) oil and gas leasing stipulations

Table of Monitoring Activities, Results, and Relevant Comments for FY 2008, Cibola National Forest and National Grasslands

ABBREVIATIONS USED IN TABLE

BBS – Breeding bird survey

BLM – Bureau of Land Management

CCF – 100 cubic feet

CFRP – Collaborative Forest Restoration Program

D2 – Mount Taylor Ranger District

D3 – Magdalena Ranger District

D4 – Mountainair Ranger District

D5 – Sandia Ranger District

D6 – Black Kettle and McClellan Creek

D7 – Kiowa and Rita Blanca

EIS – Environmental Impact Statement

EMIFPA – East Mountain Interagency Fire Protection Assoc.

FACTS – Forest Service Activity Tracking System

FARSITE - fire behavior and growth simulator

FS – Forest Service

GIS – Geographic Information System

INFRA – Infrastructure database

NEPA –National Environmental Policy Act

NMDGF – New Mexico Dept. of Game & Fish

NMSU – New Mexico State University

NWI – National Wetlands Inventory

ODWC – Okla. Dept. of Wildlife Conservation

PAC – Protected Activity Center

PAOT- People at one time

PTSAR – Periodic Timber Sale Accomplishment Reports

RD – Ranger District

RO – Regional Office

RX – Prescribed burn

SO – Forest Supervisor’s Office

TDPW – Texas Dept. of Parks and Wildlife

TEUI – Terrestrial Ecological Unit Inventory

USGS – U.S. Geological Survey

WUI – Wildland urban interface

Program Area and LRMP Monitoring Element Addressed	Monitoring Accomplished	Record Location	District	Results	Comments
Cultural Resources	Monitored Cultural Resources listed in or eligible to the National Register of Historic	SO	All	89 heritage resource sites determined eligible to the National Register	

FY 2008 Monitoring & Evaluation Report – Cibola National Forest & Grasslands

	Places				
Cultural Resources	Monitored Clearance Surveys for Cultural Resources	SO	All	127 surveys, totaling 11,092 acres for Section 106 clearances	
Cultural Resources	Monitored Cultural Resource Sites	SO	All	25 sites inspected	Inspections were done to satisfy deferred maintenance requirements or were opportunistic inspections (non project related)
Engineering and Facilities	Monitored miles of road constructed / reconstructed.	SO	All	No new roads constructed in Cibola Forest in the past year.	
Engineering and Facilities	Monitored miles of Level 3, 4, & 5 maintenance	SO	All	280.3 miles	Includes roads maintained by FS Crews, FS Contractors and FS roads under County Maintenance Agreements.
Engineering and Facilities	Monitored miles of Road obliterated	SO	All	No roads in the Cibola were obliterated in the past year..	Currently working with Districts on Travel Management Plans and developing an inventory of FS roads.
Fire	<p>Monitored tree damage and mortality from wildfire based on fire intensity effects Anderson fire area (D4) Sedgwick fire area and Garley Fire Area (D2)</p> <p>Monitored tree damage and mortality from wildfire based on fire intensity on I-40 complex fire area (McClellan Creek national Grassland) (D6)</p>	D4 forestry and fire files	D2, D4, D6	Drought conditions contributed to more intense burning (D4, D6). First order fire effects of mortality are apparent (D4).	<p>Better to wait until 2 years post fire to access fire damage and reforestation needs (D4, D6).</p> <p>First order fire effects of mortality are apparent (D2, D4).</p> <p>Continue to monitor post fire mortality for next several years; tree planting may be needed within developed recreation area (D4 D6).</p>

FY 2008 Monitoring & Evaluation Report – Cibola National Forest & Grasslands

Fire	Monitor pre-treatment fuel loading and stand densities in Manzano and Sandia Mountains. Monitored existing plots within large fire areas (D4).	SO-INFRA, D4	D4, D5	The data gathered will be analyzed in the future in FARSITE models.	
Fire	Monitored for initial fire size up parameters included topography, climate, vegetation, fire behavior, etc. on all FY 2007 wildfires.	Fire Reports-District FMO/AFMO files; SO, KCFAST database	All	Due to above-normal winter and spring precipitation, initial attacks were fewer in number and fires were smaller in size (D3,D5).	
Fire Prevention	Monitored fire hazard condition/defensible space of residences in wildland urban interfaces; 425, Lobo Canyon, Bluewater WUI, Jamestown WUI (D2)	RD-K drive; hardcopy prevention files	D2	Fire hazard conditions indicate a need to increase efforts to assist communities in developing Firewise program.	Despite fire prevention education efforts, there will continue to be people who do not know about those programs or information or do not choose to follow those guidelines. FS employees could use more training in working with the public on controversial issues. Developed comprehensive Communication Plan to provide better public communication.

FY 2008 Monitoring & Evaluation Report – Cibola National Forest & Grasslands

Fire Prevention	Monitored and collected information in collaboration with Ciudad Soil and Water Conservation District to identify areas at risk	District files	D5	Residents are continuing to do treatments on private land based on information that is being shared.	Despite fire prevention education efforts, there will continue to be people who do not know about those programs or information or do not choose to follow those guidelines. Collaboration with EMIFPA for fire prevention/education outreach and interagency cross training is desirable.
Fire Prevention	Monitored public awareness and opinions of forest conditions on Sandia Mountains (Continuing Education in Ecosystem Management [CEEM] team did an assessment of a portion of the Sandia Mountains)	District files	D5	Discovered there is an array of opinions on how the public would like to see the Sandia Mountains managed; ranging from no treatment to regular treatment and maintenance.	

FY 2008 Monitoring & Evaluation Report – Cibola National Forest & Grasslands

Fire/Fuels	<p>Monitored during- and after-treatment conditions including smoke, weather, fire behavior, fire effects on residual vegetation and other resources.</p> <p>425 prescribed burn (100 acres) and Salazar RX burn (833 acres) (D2)</p> <p>Ranch Supply RX burn (D3)</p> <p>Ultima RX broadcast burn (D4)</p> <p>Forest Road 462 Fuelbreak and Tablazon Fuelbreaks. Pile burning (D5)</p>	District files – burn plan file, FACTS	D2, D3, D4, D5	<p>Despite heavy snow on the ground, piles burned very hot. Ideal conditions for burning led to complete consumption and good smoke dispersal. Piles were very labor intensive to create. Four inch diameter and greater material was kept out of piles to aid in soil conservation. Piled pieces were cut to 3' length before piling. Thinning and piling was very labor intensive – due to location and dispersal needs – proximity to ABQ. Treatment was modified along the road where boles of trees were left intact and placed along the contour to impede vehicles from going off-road in these areas.</p> <p>Stumps were left higher and less trees were cut – seems to be working – no off-road tracks (D5).</p> <p>Pre-Salazar burn – Browns transects were completed (D2).</p> <p>A low intensity burn during the fall months in red slash from mechanical treatment caused very little residual tree mortality (D5).</p>	<p>There needs to be a Region 3 fuels monitoring protocol created for standardization across Forests.</p> <p>A good balance is needed between data collection, analysis and actual work accomplished on the ground.</p> <p>Browns transect was effective method for monitoring fuel loading.</p> <p>The person hours and funds required for these types of projects are extensive.</p>
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FY 2008 Monitoring & Evaluation Report – Cibola National Forest & Grasslands

Fire/Fuels	Monitored for compliance and objective achievement on the Forest Guild CFRP Grant – thinning and piñon-Juniper (PJ) push within Bluewater EIS project area	D2	D2		Slash treatment within PJ push – small round Juniper need to be lopped at least on one side so they don't blow into fences.
Fire/Fuels	Monitored fuel loading by clipping and weighing of vegetation in plots	D6 Range files	D6	On going	
Forestry	Monitored compliance with silvicultural prescriptions including post-treatment basal areas, canopy cover, stand densities, snag retention, and implementation of mitigation measures, timber sale, personal use firewood programs, and CFRP thinning grants administered in FY08	Districts – Forestry Records. Located in individual District Project files	D2, D3, D4		<p>Timely inspections are key to achieving desired results when implementing Designation by Description on commercial and service contracts (D2,D4).</p> <p>Monitoring has allowed the district to make length of season adjustments in personal-use firewood (D3)</p> <p>Monitoring has also allowed district to make area-wide designations for personal-use firewood (D3)</p> <p>Desired results are also achieved through interaction and collaboration with grant partners (D2)</p>

FY 2008 Monitoring & Evaluation Report – Cibola National Forest & Grasslands

Forestry	Monitored for insect or disease damage to forest stands through aerial survey (by RO) and ground sampling. Monitored for insect activity within active timber Sales & thinning projects (D2,D3,D4)	Forestry files	D2, D3, D4, D5	Mortality continues at epidemic levels of Douglas-fir tussock moth, in white fir and Douglas-fir, and various bark beetles (D5).	Slash from mechanical thinning needs to be monitored more closely for insect infestations and outbreaks. (D2) Monitoring for insect activity within timber sales and thinning projects has allowed work to continue during the bark beetle season (January-June) (D4).
Forestry	Monitored for hazard trees at all developed recreation sites, some undeveloped recreation sites, post-wildfire burn areas and roads.	District Recreation files	All	There is continued mortality, mostly white fir, in Sandia Districts developed recreation sites. (D5)	Coordinated with wildlife on the timing of hazard tree removal to reduce the impact on cavity nesters. Generally the fall is the best time of the year (D4, D3). Bucking of fallen trees is not necessary to ensure removal; fuelwood permittees do it and carry bucked sections over 100 feet to parking areas. Little unauthorized off-road travel has occurred. (D5). Hazard tree removal -it's very difficult to keep up with mortality (D5).

FY 2008 Monitoring & Evaluation Report – Cibola National Forest & Grasslands

Forestry	Monitored commercial and personal-use fuelwood areas for compliance with permits and contract requirements	District forestry files	All	Wood theft, timber trespass is occurring and compliance with closure orders is not always occurring Resource damage is occurring.	Law enforcement is not sufficient (D2, D4,D3). Inadequate support of the Forest Protection Officer (FPO) program (D2, D4,D3). Due to lack of FPOs and law enforcement, we have to move to load ticket system and NEPA designated fuelwood areas-forestwide.
Forestry	Monitored acres of overstory and final removal harvest	TIM	D2,D3,D4,D5	In 2008 we accomplished 0 acres of this harvest system.	
Forestry	Monitored acres of Intermediate Harvest	TIM and project files	D2,D3,D4,D5	In 2008 we accomplished 1014 acres of this harvest system.	
Forestry	Monitored acres in need of reforestation	FACTs	D2,D3,D4,D5	In 2008 due to fires in the east mountains we identified 4000 acres in need.	
Forestry	Timber Stand Improvement Acres	FACTs	D2	In 2008 we accomplished 1068 acres.	
Forestry	CCF of net sawtimber sold	PTSAR	D2,D3,D4,D5	975,446 CCF	
Forestry	Cords of fuelwood sold	PTSAR	All	9695 cords	
Forestry	Adequate restocking of regeneration harvest	FACTs	D2,D3,D4,D5	N/A- no acres for 2008	
Forestry	Stands and acres of forest lands identified and tracked in FS Veg-Common Stand Exams	FS Veg	D2,D3,D4,D5	N/A- no stand exams in 2008	

FY 2008 Monitoring & Evaluation Report – Cibola National Forest & Grasslands

Land Adjustments	Monitored private inholdings for available acquisition.	SO	D2, D3,D7	Acquisition of 6 private inholdings (2510 acres) will require reposting of forest boundary landline.	
Land Adjustments	Monitored right-of-way acquisition through private inholdings.	SO	D2, D3, D4, D5	Acquisition of 7 R-O-W's; 52,688 feet (approx. 10 miles).	
Minerals	Monitored for compliance with Plans of Operations	SO	D2, D3	Ongoing.	Significant uranium exploration interest.
Minerals	Monitored well pad construction for compliance with permit and condition approval; environmental effects during construction phase, inspections of well sites to ensure compliance with COA's and permit.	D6	D6	Ongoing.	Compliance inspections are reduced due to limited personnel.
Minerals	Monitored mineral withdrawals at communication sites, developed recreation facilities and administrative sites for renewals.	SO	All	Ongoing	Significant number of withdrawals need to be reviewed and appropriate action taken.

FY 2008 Monitoring & Evaluation Report – Cibola National Forest & Grasslands

Range	Monitored allotments and range structural improvements. Methods included field inspection (visual) photo, stubble height.	District files Recorded in INFRA	D2, D3, D4, D6, D7	<p>28 allotments inspected. 28 grazing permits administered to standard (D2).</p> <p>Monitored 97 pastures on 35 grazing allotments. Range conditions seemed to be stable with a slight upward trend in majority of areas. Some localized areas showed heavy utilization due to elk concentrations. Increasing tree canopy had resulted in reduced forage production in PJ and PP type (D3).</p> <p>Monitored utilization on 19 grazing allotments. Utilization levels met requirements. No new range improvements. Concentrated on improvement maintenance (D4).</p> <p>District wide allotments are considered to be at or moving toward desired conditions. Installed 3 Solar pumps, 3.25 miles of fence, 1 new stock tank, 1 new water well (D6).</p> <p>17 structures (8.5 miles) of fence constructed, 5 water developments installed along with 2 structures (1 mile) of water pipeline (D7).</p>	Conditions noted and structural maintenance needs discussed with permittees (D2). Improvements constructed as to specifications (D3).
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FY 2008 Monitoring & Evaluation Report – Cibola National Forest & Grasslands

Range	Monitored range condition.	District	D2, D3, D4, D6,D7	<p>400,000 acres maintained in satisfactory condition. 40 acres improved from impaired soil condition to satisfactory. 3 Allotment Management Plans implemented (D2).</p> <p>Monitored 26 plots on 5 grazing allotments (D3).</p> <p>Monitored range condition on 19 grazing allotments Conditions show to be stable with a slight improvement (D4).</p> <p>43 allotments (93%) monitored. All meeting or exceeding desired conditions.(D6).</p> <p>133 (90%) units monitored for use and condition on Rita Blanca. 150 (99%) units monitored on Kiowa. Monitoring indicated low production due to reduced precipitation in summer of 08 (D7).</p>	<p>Majority of range frequency data at mid to high similarity of TEUI potential (D4).</p> <p>Drought in 2008 combined with cumulative effects of preceding years below normal rainfall resulted in lower forage production. Death loss of some forage plants is evident in Cimarron County, Oklahoma and Union county, New Mexico. Authorized use reduced 70% due to lack of forage (D7).</p>
Range	Monitored Mexican Spotted Owl (MSO) – forage utilization inspection.	District files	D-3	22 MSO PACs	Met utilization requirements.

FY 2008 Monitoring & Evaluation Report – Cibola National Forest & Grasslands

Recreation – Trails	Monitored 2 miles of snowmobile trails.	D2 Rec. files	D2	Results show the need to continue to do annual trail maintenance.	Tree mortality along trails result in hazards. Travel Management priority limited other activities for the entire district except for fire.
Recreation	Monitored 8 miles of Continental Divide Trail construction	SO/D2 contract files	D2	Trail construction completed to contract specifications.	Travel Management priority precluded further monitoring.
Recreation	Monitored Non-wilderness trail construction, reconstruction and maintenance.	D7 Files	D7	Contractor constructed approximately 200 feet of accessible interpretive trail at the Mills House Ruin.	
Recreation – Developed Sites	Monitored Hazard trees at all Developed sites	D2 rec. files	D2	Continued need for annual inspections and removal.	Travel Management priority precluded further monitoring.
Recreation – Developed sites	-Hazard tree monitoring at developed recreation sites resulted in hazard tree removal at McClellan Creek, Lake Marvin, Spring Creek, Skipout Lake and Black Kettle Recreation Areas picnic areas and campgrounds (D6).	D6 Recreation Files	D6	Hazard tree removal is next to impossible to keep up with based on mortality (D6).	
Recreation	Monitored developed site use, public and private sector.	PAOT	D7	Increase occurred on D7 for developed PAOT's with the completion of the construction of Mills Rim campground and the reconstruction of Mills Canyon campground in April of 2008. Mills Rim has 6 sites and 3 double horse stalls. Mills Canyon Campground has 12 sites.	Due to extreme fire conditions NFSR 600 was closed into the Canyon for approximately 4 weeks over the Fourth of July Holiday.

FY 2008 Monitoring & Evaluation Report – Cibola National Forest & Grasslands

Recreation	Monitored condition of developed sites in the public sector.	% of facilitates in Condition Class I or II.	D7	Recreation Staff completed survey and condition work on the Santa Fe Trail Interpretive site. Condition was acceptable.	
Recreation	Monitored for increased development of PAOT for recreation use.	% of capacity	RMIS		Increased developed recreation PAOTs as a result of completion of campground project.
Special Use Permits - Lands	Monitored pipeline, powerline, and telephone special use permits for compliance with permit terms and conditions, during special use permit administration.	D6 Special uses files	D6	Permits are being issued for longer terms so the burden of re-issuance is reduced.	Compliance inspections are severely reduced due to limited personnel.
Visual Resources	No monitoring completed	n/a	D2	n/a	Travel Management priority precluded monitoring.
Watershed	Monitored effects of seeding and mulching on Trigo Fire burn sites	Rocky Mtn. Research Station (RMRS) Files	RMRS	Vegetative cover in the control site averaged 13%, the mulched site averaged 43% cover, and the seeded/seeded and mulched sites averaged 65%. The controls and the seeded sites had nearly the same number of vegetative species occurring in them. The sediment yields in the control site were larger than those in the mulched and seeded sites, but the overall differences were relatively small.	The mulching increased ground cover immediately upon application, but this cover was quickly reduced. Seeding and mulching both increased vegetative cover between the spring and fall measurements. We attributed sediment yields to four monsoonal rain storms in 2008.

FY 2008 Monitoring & Evaluation Report – Cibola National Forest & Grasslands

Watershed	Watershed Analysis on several Range Allotments	SO watershed files	D2, D3 and D4	Analysis shows small impact to riparian/wetland areas (some erosion) due to activities such as roads and dispersed recreation.	
Watershed	Monitored groundwater levels and temperature along with surface and groundwater quality constituents along Bluewater Creek	SO watershed files	D2	<p>1) Water table elevation: Response to rain events but differs in magnitude across the stream (or study site ~ 4 miles).</p> <p>2) groundwater levels have dropped since monitoring began in 2004.</p> <p>3) some stream segments indicate differences in gaining-losing magnitude.</p> <p>4) Surface water temperature continues to exceed the designated use of a cold water fishery (or 68 degree Fahrenheit).</p> <p>5) surface water and groundwater temperature indicate variable connection along stream.</p> <p>6) Dissolved oxygen results show strong surface water and groundwater connection at one stream segment.</p> <p>7) Higher concentration levels of nitrate in surface water with respect to groundwater.</p>	This study is complete. Recommendations include continue monitoring groundwater levels to help in the future management of Bluewater Creek.

FY 2008 Monitoring & Evaluation Report – Cibola National Forest & Grasslands

Watershed	Sauz Creek Evaluation	SO watershed files	D6	There is no substantial evidence to suggest that Sauz Creek is a stream system. However, Sauz Creek is defined under NWI as a channel wetland (lentic) and that these wetlands are connected to a high water table.	It is recommended to minimize trailing and wet season use by cattle to avoid compaction issues. This will also help to control head cuts.
Wildlife	Monitored acres of browse vegetation treated to improve availability and productivity.	D3, D4, D6	D3, D4, D6	<p>516 acres monitored. Monitoring of E. Magdalena Burn shows improvement in vegetative condition and water production from thinning before prescribed (Rx) fire (D3).</p> <p>Post treatment monitoring of thinning project in Baney Park shows improvement in condition of wet meadow after treatment (D3).</p> <p>Post treatment monitoring of Morley Park meadow thinning and enclosure shows that cumulative effects of grazing continue even after cattle removal in pasture, causing utilization levels to be exceeded in key habitats. Current livestock grazing levels, in combination with elk, are having detrimental effects in key areas. Near water sources, livestock grazing is primary cause of</p>	Heavy use of meadow by elk is occurring (D3).

FY 2008 Monitoring & Evaluation Report – Cibola National Forest & Grasslands

				<p>vegetative removal (D3).</p> <p>192 acres monitored. Photo point monitoring on Trigo, Big Spring and Ojo Peak wildfires show that oak is resprouting on burned areas as expected (D4).</p> <p>7200 acres monitored. Post treatment monitoring of the Black Kettle Rx burns and discing show significant increases in early successional plant species that are used by wildlife species. Monitoring of areas where eastern red cedar was removed shows increases of native brush and tree species (D6).</p>	
Wildlife	Monitored water developments.	District project or work records	All	<p>D2=6 D3=23 D4=22 D5=2 D6=15 D7=2</p>	Monitoring shows that use of artificial sites is directly correlated to availability of water at natural sites. Use of artificial sites decreases significantly with availability of natural water (D3).
Wildlife	Monitored number of quality snags per acre	Triannual Field review of forest product sale areas	D3	<p>D3=5 Other sale areas not monitored this period.</p>	Viga and personal firewood use sale areas (D3).

FY 2008 Monitoring & Evaluation Report – Cibola National Forest & Grasslands

Wildlife	Monitored number of roost groups	Triannual Field review of forest product sale areas	D3	Not monitored this period.	No D3 sale areas encompassed potential turkey roost sites.
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FY 2008 Monitoring & Evaluation Report – Cibola National Forest & Grasslands

Wildlife	Monitored for goshawk occupancy and reproductive success.	District	D2, D3, D4, D5	D2=15 D3=2 D4=4 D5=2	<p>More entries than required by protocol may be needed to determine occupancy (D3).</p> <p>After not being detected for more than ten years, the Ox Canyon goshawks were rediscovered in 2005, about one third of a mile west of the original nest area. The breeding phenology for this pair is generally: 4-27 incubation, 6-1 hatch date and 7-13 fledging date. In 2008 there was no activity at this nest site (D4).</p> <p>Since 1998, the Armijo pair has occupied three different canyons and four separate nest areas. No nest site is more than three quarters of a mile from any other. The birds were not present in Armijo in 2007. They returned in 2008 and female was incubating by 5-13, but on 7-11 there was no sign the nest ever had young. Either incubation was abandoned or the eggs didn't hatch (D5).</p>
Wildlife	Monitored for reproductive success and occupancy of threatened and endangered animals.	District	D2, D3, D4, D5	Southwestern Willow Flycatcher (SWWF) territories monitored: D2=1; Bluewater was surveyed three times: 5/23, 6/17 and 7/3. No SWWF were detected. Interesting	The May visit could not be completed due to very winter-like conditions. Wetland conditions continue to be adequate for SWWF habitat. Perhaps it stays too cold for too long in

FY 2008 Monitoring & Evaluation Report – Cibola National Forest & Grasslands

				<p>was the presence of a dusky flycatcher pair on 6/19 in the Bluestem Willows growing in a feeder channel south of the cabin</p> <p>D4=1; No SWWF were detected. Site was visited 6-12-2008.</p> <p>MSO territories monitored: D2=17 D3=12</p>	<p>Bluewater and the willows leaf out too late for occupancy.</p> <p>Yellow-breasted chats –an indicator of higher quality riparian habitat, were found just below Sun Valley. This site has ongoing shrub expansion, especially wild rose and chokecherry. The Sun Valley willow patch continues to be lush, in spite of the ongoing drought that has left the creek mostly dry. The willow patch near Tajique CC suffered a minor setback when the Big Spring Fire in late June of 2008 jumped Road 55 and singed a few places in the meadow (D4).</p> <p>Surveying to protocol does not always lead to finding MSO in occupied territories. Results appear to show that PACs in pine/oak habitats are more productive than mixed conifer habitats. Initial observations are that this may be related to food availability. Mexican spotted owl habitat monitoring at Ranch Supply Rx Burn shows that plots need to be located away from control lines to avoid false conclusions due to effects of fire intensity (D3).</p>
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FY 2008 Monitoring & Evaluation Report – Cibola National Forest & Grasslands

					<p>About 90% of the Ox Canyon PAC burned as a result of the Ojo Peak fire. This PAC will be monitored in 2009 to determine if it is still suitable for MSO occupancy (D4).</p> <p>About 1200 acres were inventoried to protocol for the Capulin Spring Picnic ground rehabilitation project and the Hondo/Sulphur Fuels Reduction Project on D5.</p>
Wildlife	Monitored Aplomado falcon prey species and population trend (Two one mile BBS transects conducted annually by volunteers).	District	D3	D3-Continues to establish baseline for prey species abundance and determines absence of Aplomado falcons in suitable habitat on 3 grazing allotments.	

FY 2008 Monitoring & Evaluation Report – Cibola National Forest & Grasslands

Wildlife	Monitored Peregrine Falcon Eyrie occupancy and nest success (Random sample conducted by NMDGF contractors).	NMDGF, Districts	D2, D3,D4, D5	11 of 17 Sites were Monitored. 2 had no occupancy, 2 had a single adult, 1 had a pair but not reproduction, 6 had 16 nestlings, at least 4 of which did not fledge. One taken by falconer.	<p>Occupancy is increasing overall on the Cibola slightly, but productivity is still suppressed.</p> <p>Closure order to protect this species on D5 updated and signed.</p> <p>NMDGF allowed take at 2 peregrine sites for falconry purposes on D3, with actual take reported.</p> <p>Rock climbing affecting eyries becoming more apparent at 2 sites on D3.</p>
Wildlife	Ferruginous Hawk Nest Monitoring – nest occupancy	SO	D7	5 NM sites were monitored in 2008, but OK and TX sites were not monitored.	Timing: The best time to monitor the platforms is from about June 18 to June 25 because the young are close to fledging then, are readily visible and easy to count. Visits to the platforms in April are not particularly useful and may be detrimental to birds known for their propensity to abandon their clutch when disturbed early in the breeding season. On average, ferruginous hawk egg incubation starts around April 18, hatching about May 11 and the young fledge about June 26.
Wildlife	Burrowing Owl occupancy of black-tailed prairie dog colonies	Long term study conducted	D7	As part of a Regionwide study, researchers from NMSU located and monitored 356 nests across 4 study	

FY 2008 Monitoring & Evaluation Report – Cibola National Forest & Grasslands

		by NMSU		areas, which is the largest standardized monitoring effort for burrowing owls. Data indicated higher nest failure in the south (44% and 30% for Kiowa-Rita Blanca and Comanche, respectively) than north (9 and 14% for Pawnee and Buffalo Gap, respectively), and productivity was significantly higher at the two northern sites. Research reports that burrowing owls are more numerous and dense on prairie dog colonies in southern compared to northern sites.	
Wildlife	Threatened and Endangered / sensitive plants - Zuni fleabane	District	D2	Inventoried areas for uranium exploration activities on D2. No new populations were discovered.	
Wildlife	Monitored occurrence and population trend of migratory and resident birds on about 140 miles of transects to determine Habitat Trends-Habitat Diversity.	Districts	D2=2 two mile routes D3=2 two mile routes D4= 2 one mile route D5=1 one mile route D6- 6 one mile	Management Indicator Species (MIS): Juniper titmouse- statewide population trend down, Cibola habitat trend stable. Pygmy nuthatch- statewide population trend up, Cibola habitat trend up. Hairy woodpecker-statewide population trend slightly up, Cibola habitat trend stable.	USGS Breeding Bird Survey has accumulated enough data during the last forty years to delineate state level population trends. Population trends on 1 and 2 mile Cibola routes can be used to compare trends at the state and National level. Juniper titmouse is especially well suited to be an Indicator Species because it is so sedentary and disinclined to wander, even in winter. Species prefers juniper dominated P/J

FY 2008 Monitoring & Evaluation Report – Cibola National Forest & Grasslands

			<p>routes D7= 3 one or two mile routes</p>	<p>Red-breasted nuthatch-statewide population trend slightly up, habitat trend stable.</p> <p>Red-naped sapsucker- statewide population trend up, habitat trend declining due to loss of aspen throughout the SW.</p> <p>House wren- statewide population trend down, Cibola habitat trend stable to improving.</p>	<p>woodlands.</p> <p>Pygmy nuthatch is often seen in flocks, causing considerable variance from year to year, thus distorting the trend. The long term habitat trend is positive because considerable restoration is planned for ponderosa habitat, i.e., it is being thinned and burned, allowing for the growth of fewer, but larger, healthier trees.</p> <p>While generally hairy woodpecker seems to be undercounted, sometimes the opposite is true, when the bird appears in clusters, as after a forest fire when trees often become infested with bugs and grubs. Such fluctuations tend to throw off the trend estimates, as can be seen in Claunch and Claunch2 BBS where the trend oscillates wildly between extremes.</p> <p>Red-breasted nuthatch is a nomad resident occurring abundantly one year and perhaps not at all the next, a phenomenon mostly linked to the availability of food supplies, i.e., a good cone crop.</p>
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FY 2008 Monitoring & Evaluation Report – Cibola National Forest & Grasslands

					<p>Red-naped sapsucker is difficult to detect, but has high site fidelity so can indicate habitat quality over the long-term in areas where it is known to occur.</p> <p>House wren is an appropriate indicator species for lower elevation riparian habitat.</p>
Wildlife	<p>Monitored Game - Management Indicator Species</p> <p>Merriam's Turkey</p> <p>Rocky Mountain Elk</p> <p>Mule Deer</p> <p>Black Bear</p> <p>Rio Grande Turkey</p>	NMDGF, ODWC, TDPW	All	<p>Monitoring in conjunction with NMDGF on D3 for black bear, mule deer, elk. Shows continuing upward trend in populations. Habitat trend for mule deer is declining in all but PJ and mountain shrub habitats, as evidenced by declining observations of mule deer in all other habitat types.</p> <p>Rio Grande turkey population is slowly increasing, all available habitat has high numbers at this time</p>	<p>Unknown if mule deer trend is due to actual decline in habitat quality or competition with elk in these habitats on D3. Population trend data is not consistent from year to year because NM units 8, 14 and 38 are low priority monitoring units for NMDGF.</p>

FY 2008 Monitoring & Evaluation Report – Cibola National Forest & Grasslands

Wildlife	<p>Monitored trends of migrating raptor populations on the Sandia and Manzano Mountains.</p> <p>Monitored Fall Passerine bird species by trapping at Capilla Peak</p>	Districts	D4, D5	<p>Spring 08- Raptor migration- Passage rate trends Among 17 species seen in most years, adjusted passage rates were significantly above average only for peregrine falcons, whereas passage rates were significantly below average for 8 of the 16 remaining species. Similar to the past two seasons, the overall combined-species median passage date of 4 April was a marginally significant two days earlier than average Fall 08—significantly higher proportion of buteos (very high abundance of Swainson’s hawks). Below average proportion of falcons, accipiters, vultures. Migration-passage rate trends significantly above average for osprey, northern goshawk, broad-winged hawk, bald eagle and merlin. Passage rates significantly below average for sharp-shinned hawk, red-tailed hawk, ferruginous hawk, rough-legged hawk, kestrel and prairie falcon. The 2008 combined-species median passage rate of 25 September nearly matched the 1985–2007 average of 26 September.</p>	
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FY 2008 Monitoring & Evaluation Report – Cibola National Forest & Grasslands

Wildlife	Monitored Habitat Stamp Number of projects, effectiveness and wildlife use	Districts	All	Enclosure effectiveness monitoring of Hudson Canyon, Beartrap, and West Red riparian enclosures (10 sites) Monitoring shows that enclosures are of limited effectiveness.	Provides data that is helpful in determining maintenance needs.
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